Figure A1. Growth in percentage of older workers by industry plotted against change in percentage of younger workers, 2001-2019 American Community Survey

Figure A2. Growth in percentage of older workers by industry plotted against change in percentage of middle-aged workers, 2001-2019 American Community Survey

Table A1. Demographic and job characteristics of older wage and salary workers, 2001 and 2019 American Community Survey

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Men and women 2001 | Men and women 2019 | Men 2001 | Men 2019 | Women 2001 | Women 2019 |
| Occupation |  |  |  |  |  |  |
| Managerial, Professional | 32.9 | 40.6 | 33.0 | 38.0 | 32.8 | 43.3 |
| Service | 14.9 | 14.7 | 12.5 | 12.0 | 17.4 | 17.5 |
| Sales | 11.1 | 9.0 | 11.0 | 8.8 | 11.3 | 9.1 |
| Support | 18.3 | 14.2 | 7.9 | 6.3 | 29.2 | 22.4 |
| Production | 22.8 | 21.5 | 35.5 | 34.9 | 9.3 | 7.7 |
|  |  |  |  |  |  |  |
| Years of schooling |  |  |  |  |  |  |
| Below 12 | 12.5 | 6.7 | 13.5 | 7.7 | 11.4 | 5.6 |
| 12 | 41.3 | 35.4 | 37.2 | 35.5 | 45.7 | 35.3 |
| 13 to 15 | 19.1 | 23.4 | 18.6 | 21.6 | 19.8 | 25.3 |
| 16 or above | 27.0 | 34.5 | 30.7 | 35.2 | 23.2 | 33.8 |
|  |  |  |  |  |  |  |
| Percentage full-time | 75.6 | 77.6 | 82.6 | 83.9 | 68.2 | 71.0 |
|  |  |  |  |  |  |  |
| Percentage male | 51.5 | 50.7 |  |  |  |  |
|  |  |  |  |  |  |  |
| Age distribution |  |  |  |  |  |  |
| 55-59 | 51.7 | 42.4 | 51.3 | 42.1 | 52.2 | 42.8 |
| 60-64 | 27.6 | 32.7 | 27.9 | 32.4 | 27.2 | 33.0 |
| 65-69 | 11.5 | 14.9 | 11.5 | 15.1 | 11.5 | 14.7 |
| 70+ | 9.2 | 10.0 | 9.3 | 10.4 | 9.1 | 9.5 |
|  |  |  |  |  |  |  |
| Income |  |  |  |  |  |  |
| Weekly earnings | 36812 | 62316 | 46703 | 76044 | 26305 | 48221 |
| Hourly earnings | 20.89 | 34.80 | 24.99 | 39.99 | 16.54 | 29.46 |
| Standard deviation of log hourly earnings | 0.740 | 0.797 | 0.768 | 0.818 | 0.668 | 0.752 |

Table A2. Percentage of older workers by industry, by year

|  |  |  |  |
| --- | --- | --- | --- |
| Industry | 2001 | 2019 | Change |
| Real estate | 22% | 31% | 9% |
| Transit and ground passenger transportation | 21% | 35% | 14% |
| Water transportation | 18% | 27% | 9% |
| Other services, except government | 17% | 26% | 9% |
| Educational Services | 17% | 24% | 7% |
| Other transportation equipment | 17% | 28% | 11% |
| Railroad transportation | 16% | 19% | 3% |
| Textile products | 15% | 27% | 12% |
| Farm | 15% | 22% | 7% |
| Truck transportation | 15% | 28% | 13% |
| Apparel and leather and allied products | 15% | 23% | 8% |
| Petroleum and coal products | 14% | 22% | 8% |
| Machinery | 14% | 26% | 12% |
| Oil and gas extraction | 14% | 21% | 7% |
| Primary metals | 14% | 26% | 12% |
| Hospitals, Nursing and residential care facilities | 14% | 24% | 10% |
| Paper products | 14% | 29% | 16% |
| Publishing (including software) | 14% | 25% | 11% |
| Electrical equipment, appliances, and components | 14% | 28% | 14% |
| Fabricated metal products | 14% | 28% | 15% |
| Social assistance | 13% | 24% | 11% |
| Amusements, gambling, and recreation industries | 13% | 19% | 5% |
| Performing arts, spectator sports, museums, and related activities | 13% | 21% | 8% |
| Mining | 13% | 24% | 11% |
| Ambulatory health care services | 13% | 22% | 9% |
| Wholesale trade | 13% | 25% | 12% |
| Other transportation and support activities | 13% | 24% | 11% |
| Miscellaneous manufacturing | 13% | 25% | 12% |
| Retail trade | 13% | 20% | 8% |
| Motor vehicles, bodies and trailers, and parts | 13% | 22% | 10% |
| Insurance carriers and related activities | 13% | 24% | 11% |
| Information and data processing services | 12% | 21% | 8% |
| Nonmetallic mineral products | 12% | 25% | 13% |
| Accommodation | 12% | 21% | 9% |
| Utilities | 12% | 27% | 15% |
| Administrative and support services | 12% | 20% | 8% |
| Computer and electronic products | 12% | 28% | 16% |
| Miscellaneous professional, scientific, and technical services | 12% | 20% | 9% |
| Furniture | 11% | 25% | 14% |
| Food products | 11% | 21% | 10% |
| Plastics and rubber products | 11% | 25% | 13% |
| Management of companies and enterprises | 11% | 23% | 12% |
| Wood products | 11% | 23% | 12% |
| Printing | 11% | 31% | 20% |
| Forestry, Fishing, and Hunting | 11% | 22% | 11% |
| Air transportation | 11% | 29% | 18% |
| Chemical products | 11% | 25% | 14% |
| Warehousing and storage | 11% | 15% | 4% |
| Waste management and remediation services | 11% | 26% | 15% |
| Legal services | 11% | 26% | 15% |
| Banking and credit intermediations | 10% | 19% | 9% |
| Rental and Leasing | 10% | 23% | 13% |
| Pipeline transportation | 10% | 30% | 20% |
| Securities, commodities, funds, trusts, and other financial investments | 10% | 21% | 12% |
| Construction | 8% | 18% | 10% |
| Support activities for mining | 8% | 19% | 11% |
| Broadcasting and telecommunications | 8% | 19% | 11% |
| Motion picture and sound recording | 7% | 10% | 4% |
| Computer systems design and related services | 6% | 14% | 8% |
| Food services and drinking places | 5% | 8% | 3% |

Table A3. Industries with lowest and highest percentage of older workers, American Community Survey, 2001-2019

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 2001-2019 average | 2001 | 2019 | Change 2000-2019 |
| Industries with highest percentage of older workers | | | | |
| Urban transit | 31 | 21 | 35 | 14 |
| Real estate | 26 | 22 | 31 | 9 |
| Transportation equipment manufacturing other than motor vehicles | 23 | 17 | 28 | 11 |
| Educational services | 23 | 17 | 24 | 7 |
| Water transportation | 22 | 18 | 27 | 9 |
| Textile product manufacturing | 22 | 15 | 27 | 12 |
| Other services, except public administration | 22 | 17 | 26 | 9 |
| Paper product manufacturing | 22 | 14 | 29 | 15 |
| Utilities | 22 | 12 | 27 | 15 |
| Information and data processing services | 22 | 12 | 21 | 9 |
| Railroad transportation | 21 | 17 | 19 | 2 |
| Primary metal manufacturing | 21 | 14 | 26 | 12 |
| Truck transportation | 21 | 15 | 28 | 13 |
| Electrical equipment, appliances, and component manufacturing | 21 | 14 | 28 | 14 |
| Machinery manufacturing | 21 | 14 | 26 | 12 |
| Fabricated metal products | 21 | 14 | 28 | 14 |
| Mining | 21 | 13 | 24 | 11 |
| Industries with lowest percentage of older workers | | | | |
| Rental and leasing services | 16 | 10 | 23 | 13 |
| Retail trade | 16 | 13 | 20 | 7 |
| Amusements, gambling, and recreation | 16 | 13 | 19 | 6 |
| Food product manufacturing | 16 | 11 | 21 | 10 |
| Securities, commodities, funds, trusts, and other financial investments | 16 | 10 | 21 | 11 |
| Administrative and support services | 16 | 12 | 20 | 8 |
| Banking and credit intermediation | 15 | 10 | 19 | 9 |
| Support activities for mining | 14 | 8 | 19 | 11 |
| Broadcasting and telecommunications | 13 | 7 | 19 | 12 |
| Warehousing and storage | 13 | 11 | 15 | 4 |
| Construction | 13 | 8 | 18 | 10 |
| Computer systems design and related services | 11 | 6 | 14 | 8 |
| Motion picture and sound recording | 9 | 7 | 10 | 3 |
| Food services and drinking places | 6 | 5 | 8 | 3 |
|  | | | | |
| Unweighted mean for all industries | 19 | 13 | 23 | 10 |

Table A4. Hours-weighted regressions

|  |  |  |  |
| --- | --- | --- | --- |
| Dependent variable | Change in percentage of workers 55 and above | | |
| Years | 2001-2007 | 2007-2019 | 2001-2019 |
|  |  |  |  |
| Percent college | 0.0250 | -0.131\*\*\* | -0.111\*\*\* |
| graduates | (0.0180) | (0.0420) | (0.0371) |
|  |  |  |  |
| Percent female | 0.0177 | -0.0313 | -0.00888 |
|  | (0.0118) | (0.0229) | (0.0278) |
|  |  |  |  |
| Percent | -0.0734 | -0.0681 | -0.145 |
| professional | (0.0513) | (0.105) | (0.116) |
|  |  |  |  |
| GDP growth | -0.0224\* | -0.0144\*\* | -0.00977 |
|  | (0.0112) | (0.00625) | (0.0243) |
|  |  |  |  |
| GDP | 0.0815 | 0.0133 | -0.132 |
| variance | (0.145) | (0.117) | (0.282) |
|  |  |  |  |
| Ln(K/L) | -0.00162 | -0.00614 | -0.00651 |
|  | (0.00205) | (0.00443) | (0.00490) |
|  |  |  |  |
| Ln(HiTecK/L) | 0.00436\* | 0.0120\*\*\* | 0.0119\* |
|  | (0.00229) | (0.00429) | (0.00598) |
|  |  |  |  |
| Pension | 0.0440\*\* | 0.120\*\*\* | 0.182\*\*\* |
| coverage | (0.0180) | (0.0424) | (0.0517) |
|  |  |  |  |
| Percent in | -0.00982 | -0.00169 | -0.0196 |
| Large firms | (0.0152) | (0.0383) | (0.0436) |
|  |  |  |  |
| Percent long | 0.00191 | -0.259\*\*\* | -0.232\*\* |
| term workers | (0.0450) | (0.0961) | (0.104) |
|  |  |  |  |
| Union | 0.00949 | -0.0300 | -0.0350 |
| coverage | (0.0185) | (0.0361) | (0.0437) |
|  |  |  |  |
| Ln wage ratio | -0.0153 | 0.0311 | 0.0142 |
| 55+ to 16-29 | (0.0118) | (0.0490) | (0.0324) |
|  |  |  |  |
| Constant | 0.0251\* | 0.0834\*\*\* | 0.102\*\*\* |
|  | (0.0130) | (0.0286) | (0.0317) |
| *N* | 60 | 60 | 60 |
| *R*2 | 0.531 | 0.448 | 0.415 |

Standard errors in parentheses

\* *p* < 0.10, \*\* *p* < 0.05, \*\*\* *p* < 0.01

Table A5. Employment weighted regressions

|  |  |  |  |
| --- | --- | --- | --- |
| Dependent variable | Change in percentage of workers 55 and above | | |
| Years | 2001-2007 | 2007-2019 | 2001-2019 |
|  |  |  |  |
| Percent college | 0.0133 | -0.103\*\* | -0.106\*\* |
| graduates | (0.0158) | (0.0378) | (0.0375) |
|  |  |  |  |
| Percent female | 0.0189 | -0.0397 | -0.00978 |
|  | (0.0114) | (0.0218) | (0.0280) |
|  |  |  |  |
| Percent | -0.0637 | -0.0517 | -0.129 |
| professional | (0.0541) | (0.0953) | (0.119) |
|  |  |  |  |
| GDP growth | -0.0168 | -0.0154\* | -0.0133 |
|  | (0.00846) | (0.00657) | (0.0231) |
|  |  |  |  |
| GDP | 0.140 | 0.0471 | 0.0123 |
| variance | (0.103) | (0.0977) | (0.329) |
|  |  |  |  |
| Ln(K/L) | 0.000229 | -0.00456 | -0.00477 |
|  | (0.00180) | (0.00461) | (0.00487) |
|  |  |  |  |
| Ln(HiTecK/L) | 0.00313 | 0.0110\*\* | 0.0117\* |
|  | (0.00188) | (0.00397) | (0.00560) |
|  |  |  |  |
| Pension | 0.0665\*\*\* | 0.128\*\* | 0.203\*\*\* |
| coverage | (0.0150) | (0.0394) | (0.0508) |
|  |  |  |  |
| Percent in | -0.0147 | -0.0219 | -0.0366 |
| Large firms | (0.0121) | (0.0346) | (0.0419) |
|  |  |  |  |
| Percent long | -0.0241 | -0.234\* | -0.250\* |
| term workers | (0.0371) | (0.0960) | (0.0960) |
|  |  |  |  |
| Union | 0.00766 | -0.0317 | -0.0327 |
| coverage | (0.0149) | (0.0317) | (0.0390) |
|  |  |  |  |
| Ln wage ratio | -0.0251\*\* | 0.00621 | -0.00737 |
| 55+ to 16-29 | (0.00859) | (0.0367) | (0.0302) |
|  |  |  |  |
| Constant | 0.0148 | 0.0852\*\* | 0.0967\*\* |
|  | (0.0112) | (0.0270) | (0.0284) |
| *N* | 60 | 60 | 60 |
| *R*2 | 0.651 | 0.457 | 0.438 |

Standard errors in parentheses

\* *p* < 0.05, \*\* *p* < 0.01, \*\*\* *p* < 0.001

Table A6. Coefficients and standard errors of pension variables.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Dependent variable | Change in percentage of workers 55 and above | | | | | |
| Years | 2001-2007 | 2001-2007 | 2007-2019 | 2007-2019 | 2001-2019 | 2001-2019 |
|  |  |  |  |  |  |  |
| Pension | 0.0591\*\*\* |  | 0.125\*\*\* |  | 0.199\*\*\* |  |
| coverage | (0.0171) |  | (0.0412) |  | (0.0505) |  |
|  |  |  |  |  |  |  |
| DB plan |  | 0.0580 |  | 0.181 |  | 0.289\*\* |
| coverage |  | (0.0615) |  | (0.114) |  | (0.138) |
|  |  |  |  |  |  |  |
| DC plan |  | 0.0608\*\*\* |  | 0.116\*\* |  | 0.191\*\*\* |
| coverage |  | (0.0180) |  | (0.0431) |  | (0.0529) |
|  |  |  |  |  |  |  |
| F-test DB=DC |  | 0.00 |  | 0.029 |  | 0.050 |
| Prob>F |  | 0.966 |  | 0.592 |  | 0.483 |
|  |  |  |  |  |  |  |
| *N* | 60 | 60 | 60 | 60 | 60 | 60 |
| *R*2 | 0.583 | 0.587 | 0.443 | 0.451 | 0.441 | 0.452 |

Standard errors in parentheses

\* *p* < 0.10, \*\* *p* < 0.05, \*\*\* *p* < 0.01

The models contain the same control variables that appear in Table 1, columns 2, 4 and 6.

Table A7. Coefficients and standard errors of selected measures of high-tech capital

|  |  |  |  |
| --- | --- | --- | --- |
| Dependent variable | Change in percentage of workers 55 and above | | |
| Years | 2001-07 | 2007-2019 | 2001-2019 |
|  |  |  |  |
| Measure |  |  |  |
| 1) High tech equipment | 0.0026 | 0.0117\*\* | 0.0104+ |
|  | (0.0021) | (0.0043) | (0.0061) |
|  |  |  |  |
| 2) Add software to 1 | 0.0035 | 0.0113\* | 0.0107+ |
|  | (0.0022) | (0.0047) | (0.0062) |
|  |  |  |  |
| 3) Add systems design | 0.0034 | 0.0117\* | 0.0110+ |
| & Publishers to 2 (same | (0.0022) | (0.0045) | (0.0060) |
| as Table 1) |  |  |  |
|  |  |  |  |
| 4) Include all IPP | -0.0003 | 0.0015 | -0.0024 |
|  | (0.0019) | (0.0048) | (0.0051) |

+ *p* < 0.10, \* *p* < 0.05, \*\* *p* < 0.01

Row 1: High tech equipment consists of mainframes, PCs. DASDs, printers, terminals, tape drives, storage devices. System integrators, communications, nonelectrical medical instruments, electrical medical instruments, nonmedical instruments, photocopy and related equipment, and office and accounting equipment (codes EP1A through EP12 in BEA measures of current-cost net capital stock).

Row 2: Software consists of prepackaged software, custom software, and own account software (codes ENS1 through ENS3 in BEA measures of current-cost net capital stock)

Row 3: Software publishers (RD40) and computer systems design and related services (RD60) are added to row 2.

Row 4: Includes all high-tech equipment from row 1 and all 25 categories of intellectual property products tracked by BEA.

Table A8. Regression results: sample split by years of schooling

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Dependent variable | Change in percentage of workers 55 and above | | | | | |
| Years | 2001-07 | 2001-07 | 2007-2019 | 2007-2019 | 2001-2019 | 2001-2019 |
|  |  |  |  |  |  |  |
| Sample 1: 12 or less years of schooling (N=60) | | | | | | |
| Pension coverage | 0.047 | 0.052 | 0.148\* | 0.167\*\* | 0.193\* | 0.202\* |
| (0.033) | (0.032) | (0.067) | (0.059) | (0.077) | (0.076) |
|  |  |  |  |  |  |  |
| Ln(HiTecK/L) | -0.0014 | 0.0000 | 0.0069 | 0.0115 | 0.0053 | 0.0082 |
| (0.0028) | (0.0032) | (0.0097) | (0.0099) | (0.0103) | (0.0109) |
|  |  |  |  |  |  |  |
| Sample 2: More than 12 years of schooling (N=60) | | | | | | |
| Pension coverage | 0.043+ | 0.038 | 0.064 | 0.054 | 0.142\*\* | 0.149\*\* |
| (0.024) | (0.025) | (0.043) | (0.043) | (0.047) | (0.048) |
|  |  |  |  |  |  |  |
| Ln(HiTecK/L) | 0.0014 | 0.0022 | 0.0129\*\* | 0.0111\* | 0.0096+ | 0.0086 |
| (0.0024) | (0.0023) | (0.0048) | (0.0051) | (0.0054) | (0.0054) |
|  |  |  |  |  |  |  |
| Sample 3: Both schooling groups pooled (N=120) | | | | | | |
| Pension coverage |  | 0.068\*\* |  | 0.117\*\* |  | 0.184\*\* |
|  | (0.020) |  | (0.036) |  | (0.043) |
|  |  |  |  |  |  |  |
| Ln(HiTecK/L) |  | 0.0019 |  | 0.0102+ |  | 0.0068 |
|  | (0.0019) |  | (0.0057) |  | (0.0057) |

Standard errors in parentheses

+ *p* < 0.10, \* *p* < 0.05, \*\* *p* < 0.01

The models contain the same control variables that appear in Table 1.